[DOCUMENT NAME] SCOPE OF CLAIM FOR PATENT

1 A monitor apparatus of a wireless network, characterized in including:

a means connected to an access point of the wireless network via a network, said means receiving packet transfer information of said access point to extract an address of which a transfer destination is a wireless interface from said packet transfer information; and an estimating means for estimating that a terminal having said extracted address exists as a subordinate of the access point retaining said packet transfer information.

2 A monitor apparatus of a wireless network, characterized in including:

a means connected to an access point of the wireless network via a network, said means receiving packet transfer information of said access point to extract an address of which a transfer destination is a wireless interface from said packet transfer information; and

a determining means for investigating an operation situation of a terminal having said extracted address to determine that said terminal having said address has a connection with the access point retaining said packet transfer information in a case where said terminal having

said address is in operation.

3 The monitor apparatus of a wireless network according to claim 2, characterized in including:

a managed terminal list having an address of a terminal, which is a target of management, registered; and

a determining means for comparing said extracted address with an address described in said managed terminal list, and for, in a case where said extracted address is not included in said managed terminal list, determining that an access to the access point retaining said packet transfer information has been made by a terminal that is not a target of management.

4 The monitor apparatus of a wireless network according to claim 2, characterized in including a means for drawing a result on a relation between an access point and terminals, which are estimated to be existent as subordinates of said access point, or are determined to be in connection with said access point, for all the access points under management thereof to display a relation between each access point and each terminal that is estimated to be existent as a subordinate of each access point, or each terminal that is determined to be in connection with each access point.

5 The monitor apparatus of a wireless network according to claim 2, characterized in, in a case where the address of the identical terminal has been described in said packet transfer information retained by plural access points, including:

a means for, from among said packet transfer information, selecting the packet transfer information retained by the access point belonging to an identical subnet to that of said terminal, or the access point corresponding to a virtual LAN; and

a means for, in a case where said selected packet transfer information retained by the access point belongs to the identical subnet to that of said terminal, and yet the number thereof is only one, estimating that said terminal exists as an subordinate of said one access point, or determines that said terminal has a connection with its access point, for, in a case where said access point belongs to the identical subnet to that of said terminal, and yet the number thereof is plural, estimating that said terminal exists as an subordinate of one of said plurality of said access points, or determines that said terminal has a connection with its access point, and for, in a case where all said access points do not belong to the identical subnet to that of said terminal, and yet each

thereof is an access point corresponding to a virtual LAN, estimating that said terminal exists as an subordinate of one of said access points corresponding to said virtual LAN, or determines that said terminal has a connection with to its access point.

6 The monitor apparatus of a wireless network according to claim 2, characterized in, in a case where the address of the identical terminal has been described in said packet transfer information retained by plural access points, including:

a means for, from said terminal, acquiring identification information of the wireless network to which said terminal belongs;

a means for comparing identification information of said plural access points with the identification information acquired from said terminal; and

a means for estimating that said terminal exists as a subordinate of the access point having the identification information identical to the identification information acquired from said terminal, or determining that said terminal has a connection with its access point.

7 A monitor system of a wireless network, said monitor system being configured of:

at least one access point of a wireless network;

at least one terminal of the wireless network; and

a monitor apparatus connected to said access point via a network, characterized in that said monitor apparatus includes:

a means for receiving packet transfer information of said access point to extract an address of which a transfer destination is a wireless interface from said packet transfer information; and

an estimating means for estimating that said terminal having said extracted address exists as a subordinate of the access point retaining said packet transfer information.

8 A monitor system of a wireless network, said monitor system being configured of:

at least one access point of the wireless network;

at least one terminal of the wireless network; and

a monitor apparatus connected to said access point via a network, characterized in that said monitor apparatus includes:

a means for receiving packet transfer information of said access point to extract an address of which a transfer destination is a wireless interface from said packet transfer information; and

a determining means for investigating an operation situation of said terminal having said extracted address to determines that said terminal having said address has a connection with the access point retaining said packet transfer information in a case where said terminal having said address is in operation.

9 The monitor system of a wireless network according to claim 8, characterized in that said monitor apparatus includes:

a managed terminal list having an address of a terminal, which is a target of management, registered; and

a determining means for comparing said extracted address with an address described in said managed terminal list to determine that an access to the access point retaining said packet transfer information has been made by a terminal that is not a target of management in a case where said extracted address is not included in said managed terminal list.

10 The monitor system of a wireless network according to claim 8, characterized in that said monitor apparatus includes a means for drawing a result on a relation between a access point and terminals, which are estimated to be existent as subordinates thereof, or are determined

to be in connection with said access point, for all access points under management thereof to display a relation between each access point and each terminal that is estimated to be existent as a subordinate of each access point, or each terminal that is determined to be in connection with each access point.

11 The monitor system of a wireless network according to claim 8, characterized in that, in a case where the address of the identical terminal has been described in said packet transfer information retained by plural access points, said monitor apparatus includes:

a means for, from among said packet transfer information, selecting the packet transfer information retained by the access point belonging to an identical subnet to that of said terminal, or the access point corresponding to a virtual LAN; and

a means for, in a case where said selected packet transfer information retained by the access point belongs to the identical subnet to that of said terminal, and yet the number thereof is only one, estimating that said terminal exists as an subordinate of said one access point, or determining that said terminal has a connection with its access point, for, in a case where said access point belongs to the identical subnet to that of said terminal,

and yet the number thereof is plural, estimating that said terminal exists as an subordinate of one of said plurality of said access points, or determining that said terminal has a connection with its access point, and for, in a case where all the access points do not belong to the identical subnet to that of said terminal, and yet each thereof is an access point corresponding to a virtual LAN, estimating that said terminal exists as an subordinate of one of said access points corresponding to said virtual LAN, or determining that said terminal has a connection with its access point.

12 The monitor system of a wireless network according to claim 8, characterized in that, in a case where the address of the identical terminal has been described in said packet transfer information retained by plural access points, said monitor apparatus includes:

a means for, from said terminal, acquiring identification information of the wireless network to which said terminal belongs;

a means for comparing identification information of said plural access points with the identification information acquired from said terminal; and

a means for estimating that said terminal exists as a subordinate of the access point having identification

information identical to the identification information acquired from said terminal, or determining that said terminal has a connection with its access point.

13 The monitor system of a wireless network according to claim 8, characterized in that:

said terminal includes a means for transmitting a broadcast packet; and

said access point includes a means for updating the packet transfer information that the access point retains based upon said broadcast packet.

14 The monitor system of a wireless network according to claim 8, characterized in that, said access point includes:

a means for notifying to the other access point information as to which access point to which the terminal belongs; and

a means for updating the packet transfer information that the access point retains based upon said information as to which access point to which said terminal belongs.

15 A control program of an information processing apparatus, said information processing apparatus being connected to an access point of a wireless network via a

network and employed as a monitor apparatus, characterized in causing said information processing apparatus to function as:

a means for receiving packet transfer information of said access point to extract an address of which a transfer destination is a wireless interface from said packet transfer information; and

an estimating means for estimating that said terminal having said extracted address exists as a subordinate of the access point retaining said packet transfer information.

16 A control program of an information processing apparatus, said information processing apparatus being connected to an access point of a wireless network via a network and employed as a monitor apparatus, characterized in causing said information processing apparatus to function as:

a means for receiving packet transfer information of said access point to extract an address of which a transfer destination is a wireless interface from said packet transfer information; and

a determining means for investigating an operation situation of said terminal having said extracted address to determines that said terminal having said address has a

connection with the access point retaining said packet transfer information in a case where said terminal having said address is in operation.

17 The control program of an information processing apparatus according to claim 16, characterized in causing said information processing apparatus to function as a determining means for comparing said extracted address with an address described in a managed terminal list having an address of a terminal, which is a target of management, registered to determine that an access to the access point retaining said packet transfer information has been made by a terminal that is not a target of management in a case where said extracted address is not included in said managed terminal list.

18 The control program of an information processing apparatus according to claim 16, characterized in causing said information processing to function as a means for drawing a result on a relation between an access point and terminals, which are estimated to be existent as subordinates of said access point, or are determined to be in connection with said access point, for all the access points under management thereof to display a relation between each access point and each terminal that is

estimated to be existent as a subordinate of each access point, or each terminal that is determined to be in connection with each access point.

19 The control program of an information processing apparatus according to claim 16, characterized in, in a case where the address of the identical terminal has been described in said packet transfer information retained by plural access points, causing said information processing apparatus to function as:

a means for, from among said packet transfer information, selecting the packet transfer information retained by the access point belonging to the identical subnet to that of said terminal, or the access point corresponding to a virtual LAN; and

a means for, in a case where said selected packet transfer information retained by the access point belongs to the identical subnet to that of said terminal, and yet the number thereof is only one, estimating that said terminal exists as an subordinate of said one access point, or determining that said terminal has a connection with its access point, for, in a case where said access point belongs to the identical subnet to that of said terminal, and yet the number thereof is plural, estimating that said terminal exists as an subordinate of one of said plurality

of said access points, or determining that said terminal has a connection with its access point, and for, in a case where all the access points do not belong to the identical subnet to that of said terminal, and yet each thereof is an access point corresponding to a virtual LAN, estimating that said terminal exists as an subordinate of one of said access points corresponding to said virtual LAN, or determining that said terminal has a connection with its access point.

20 The control program of an information processing apparatus according to claim 16, characterized in, in a case where the address of the identical terminal has been described in said packet transfer information retained by plural access points, causing said information processing apparatus to function as:

a means for, from said terminal, acquiring identification information of the wireless network to which the terminal belongs;

a means for comparing identification information of said plural access points with the identification information acquired from said terminal; and

a means for estimating that said terminal exists as a subordinate of the access point having the identification information identical to the identification information

acquired from said terminal, or determining that said terminal has a connection with its access point.

21 A monitor method of a wireless network for managing a terminal, is characterized in including the steps of:

extracting an address of which a transfer destination is a wireless interface from packet transfer information that an access point of the wireless network retains; and

estimating that a terminal having said extracted address exists as a subordinate of the access point retaining said packet transfer information.

22 A monitor method of a wireless network for managing a terminal, is characterized in including the steps of:

extracting an address of which a transfer destination is a wireless interface from packet transfer information that an access point of the wireless network retains; and

investigating an operation situation of a terminal having said extracted address to determine that said terminal having said address has a connection with the access point retaining said packet transfer information in a case where said terminal having said address is in operation.

23 The monitor method of a wireless network according to

claim 22, characterized in including a step of comparing said extracted address with an address described in a managed terminal list having an address of a terminal, which is a target of management, registered to determine that an access to the access point retaining said packet transfer information has been made by a terminal that is not a target of management in a case where said extracted address is not included in said managed terminal list.

24 The monitor method of a wireless network according to claim 22, characterized in including a step of drawing a result on a relation between an access point and terminals, which are estimated to be existent as subordinates of said access point, or are determined to be in connection with said access point, for all the access points under management thereof to display a relation between each access point and each terminal that is estimated to be existent as a subordinate of each access point, or each terminal that is determined to be in connection with each access point.

25 The monitor method of a wireless network according to claim 22, characterized in, in a case where the address of the identical terminal has been described in said packet transfer information retained by plural access points,

including:

a step of, from among said packet transfer information, selecting the packet transfer information retained by the access point belonging to the identical subnet to that of said terminal, or the access point corresponding to a virtual LAN; and

a step of, in a case where said selected packet transfer information retained by the access point belongs to the identical subnet to that of said terminal, and yet the number thereof is only one, estimating that said terminal exists as an subordinate of said one access point, or determining that said terminal has a connection with its access point, of, in a case where said access point belongs to the identical subnet to that of said terminal, and yet the number thereof is plural, estimating that said terminal exists as an subordinate of one of said plurality of said access points, or determining that said terminal has a connection with its access point, and of, in a case where all the access points do not belong to the identical subnet to that of said terminal, and yet each thereof is an access point corresponding to a virtual LAN, estimating that said terminal exists as an subordinate of one of the access points corresponding to said virtual LAN, or determining that said terminal has a connection with its access point.

26 The monitor method of a wireless network according to claim 22, characterized in, in a case where the address of the identical terminal has been described said packet transfer information retained by plural access point, including:

a step of, from said terminal, acquiring identification information of the wireless network to which said terminal belongs;

a step of comparing identification information of said plural access points with the identification information acquired from said terminal; and

a step of estimating that said terminal exists as a subordinate of the access point having the identification information identical to the identification information acquired from said terminal, or determining that said terminal has a connection with its access point.